



DOT Shipping Papers and HM215C Requirements

Thursday September 6, 2001

T-410

Nick Vent

(619) 338-2217

County of San Diego

Environmental Health Department



HM 215C



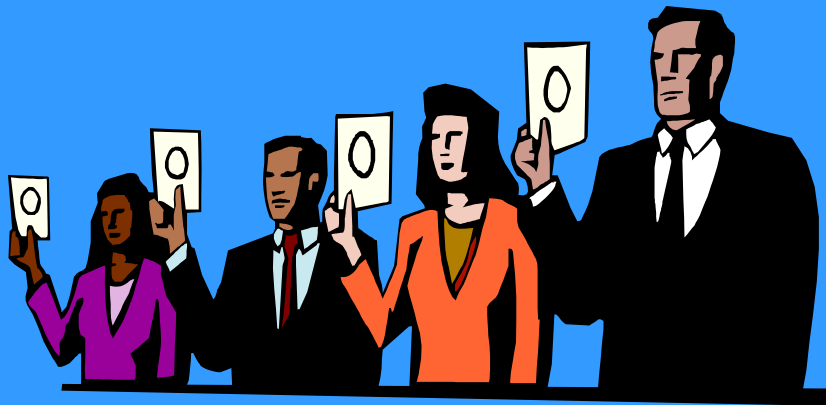
Hazardous Materials: Harmonization with the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organizations Technical Instructions

California Commercial Drivers Handbook - 2001

- If the load could require Placards, the driver will have a Hazmat (H) endorsement on their drivers license
 - Special certification for Cryogenics
- Drivers will have Commercial drivers license to haul Hazmat
- Refresher training to be held at least every 3 years
 - Hazmat employer must certify training

Laws and Regulations

- 49 Code of Federal Regulations (CFR)
- RCRA
- CERCLA
- SARA
- 40 CFR
- Title 22, Division 4.5, CCR (Disclosure)
- Title 8 Section 3203 (IIPP)
- Title 8 Section 5194 (Haz Com)



HAZARD CLASSES

RCRA

- **T**OXIC
- **R**EACTIVE
- **I**GNITABLE
- **C**ORROSIVE

DOT

- 1) Explosive
- 2) Gases
- 3) Flammable Liquid
- 4) Flammable Solid
- 5) Oxidizer
- 6) Poisons
- 7) Radioactive
- 8) Corrosive
- 9) ORM

WHAT IS HAZARDOUS

- Causes increased mortality, serious irreversible illness, or incapacitating reversible illness, or
- Poses a substantial present or potential hazard to human health or the environment,
- Meets any of the criteria for identification of hazardous waste or material adopted by the California Dept. of Toxic Substance Control
- Are listed wastes or materials

Hazardous Material or Waste?

Simply put:

Has no use or intended reuse

Note: Some recyclable materials may have to be treated as wastes until recycled appropriately

DOT Definitions

(See book)

- Bulk Packaging
- Cargo Aircraft only
- Cargo Tank
- Composite packaging
- Drum
- Flash Point
- Gross Weight or mass
- Hazard Class
- Hazardous Material
- Hazmat Employee
- Hazmat employer
- Limited quantity
- Marking
- Navigable waters
- N.O.S. description
- ORM
- Overpack
- Packing group
- Portable tank
- Primary hazard
- Proper shipping name
- Reportable quantity (RQ)
- Shipping paper
- Subsidiary hazard
- Technical name

Hazardous Materials Table

49 CFR 172.101

- Using the Table
 - Is it hazardous?

§172.101 HAZARDOUS MATERIALS TABLE

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Accelerant, see p- nitrodimethylaniline												
	Accumulators, electric, see Batteries, wet etc.												
D	Accumulators, pressurized, pneu- matic or hydraulic (containing non- flammable gas)	2.2	NA1956		2.2		306	306	None	No limit	No limit	A	
	Acetal	3	UN1088	II	3	77	150	202	242	5 L	60 L	E	
	Acetaldehyde	3	UN1089	I	3	A3, B16, T20, T26, T29	None	201	243	Forbidden	30 L	E	
A	Acetaldehyde ammonia	9	UN1841	III	9		155	204	240	200 kg	200 kg	A	34
	Acetaldehyde oxime	3	UN2332	III	3	B1, T8	150	203	242	60 L	230 L	A	
	Acetic acid, glacial or Acetic acid so- lution, with more than 80 percent acid, by mass	8	UN2789	II	8, 3	A3, A6, A7, A10, B2, T8	154	202	243	1 L	30 L	A	
	Acetic acid solution, with more than 10 percent but not more than 80 percent acid, by mass	8	UN2790	II	8	A3, A6, A7, A10, B2, T8	154	202	242	1 L	30 L	A	
	Acetic anhydride	8	UN1715	II	8, 3	A3, A6, A7, A10, B2, T8	154	202	243	1 L	30 L	A	40
	Acetone	3	UN1090	I	3		150	202	242	5 L	60 L	B	
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	6.1	2, A3, B9, B14, B32, B76, B77, N34, T38, T43, T45	None	227	244	Forbidden	30 L	D	25, 40, 49
	Acetone oils	3	UN1091	II	3		150	202	242	5 L	60 L	B	
	Acetonitrile	3	UN1648	II	3	T7, T30	150	202	242	1 L	60 L	B	40
	Acetyl acetone peroxide with more than 9 percent by mass active ox- ygen	Forbidden				T14	150	202	242	1 L	60 L	B	
	Acetyl benzoyl peroxide, solid, or with more than 40 percent in solu- tion	Forbidden											
	Acetyl bromide	8	UN1716	II	8	B2, T12, T26	154	202	242	1 L	30 L	C	40
	Acetyl chloride	3	UN1717	II	3, 8	A3, A6, A7, B100, N34, T16, T26	None	202	243	1 L	5 L	B	40
	Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water	Forbidden											

§ 172.101

49 CFR Ch. I (10-1-97 Edition)


- Proper Shipping name from Column 2

Hazardous Materials Table

49 CFR 172.101



- Which Hazard Class?
 - Refer to vendor's determination
 - Check your computer records
 - Check you MSDS

		Genium Publishing Corp. One Genium Plaza Schenectady, NY 12304-4690 (518) 377-8854		Material Safety Data Sheet Collection Phosphorus Trichloride MSDS No. 110 Date of Preparation: 10/82 Revision: B, 4/96	
Section 1 - Chemical Product and Company Identification 48					
Product/Chemical Name: Phosphorus Trichloride Chemical Formula: PCl ₃ CAS Number: 7719-12-2 Other Designations: phosphorous chloride, phosphorus chloride, trichlorophosphine Derivation: By reaction of yellow phosphorus with chlorine. General Use: In the process of depositing metal on rubber; as a chemical intermediate in the production of organophosphate pesticides, agricultural chemicals, surfactants, phosphites, lab reagents, gas additives, plasticizers, dyestuffs, germicidal preparations, medications; as a finishing agent for textiles; as a chlorinating agent and catalyst; and in the manufacture of phosphorus oxychloride and phosphorus pentachloride. Vendors: Consult the latest <i>Chemical Week Buyers' Guide</i> . (73)					
Section 2 - Composition / Information on Ingredients					
Phosphorus Trichloride: 99.5 % (pure), 98.5% (technical) Trace Impurities: May contain unreacted phosphorus.					
OSHA PELs 8-hr TWA: 0.5 ppm (3 mg/m ³) <i>1989 Vacated Final Rule Limits:</i> 8-hr TWA: 0.2 ppm (1.5 mg/m ³) STEL: 0.5 ppm (3 mg/m ³) ACGIH TLVs TWA: 0.2 ppm (1.1 mg/m ³) STEL: 0.5 ppm (2.8 mg/m ³)		NIOSH REL 10-hr TWA: 0.2 ppm (1.5 mg/m ³) STEL: 0.5 ppm (3 mg/m ³) IDLH Level 25 ppm		DFG (Germany) MAK TWA: 0.5 ppm (3 mg/m ³) Category I: Local irritants Peak Exposure Limit: 1.0 ppm (3 mg/m ³), 5 min, momentary value, 8 per shift	
Section 3 - Hazards Identification					
<div>☆☆☆☆ Emergency Overview ☆☆☆☆ Phosphorus trichloride exists as a clear, colorless to yellow, fuming, nonflammable liquid with an irritating, pungent, acid-like odor. Handle with extreme caution! It is extremely corrosive to the skin, eyes, and respiratory tract. It is a strong oxidizer and reacts exothermically (gives off heat) with water.</div>				<div>Wilson Risk Scale R 2 I 4 S 4 K 1</div>	
<div>Potential Health Effects Primary Entry Routes: Inhalation and skin and eye contact. Target Organs: Respiratory tract, skin, and eyes. Acute Effects Inhalation: Coughing, burning in the nose, throat and eyes, lacrimation (tearing), necrosis (tissue destruction) of the nostrils, mouth ulcers, pharyngeal irritation, oppressive feeling in the chest, difficulty breathing, respiratory tract irritation, nausea, vomiting, hypoxemia (abnormal oxygenation of arterial blood), decrease in pulmonary function tests, and pulmonary edema (fluid in lungs) which may be delayed from 2 to 24 hr. A severe asthmatic bronchitis has occurred 1 to 8 weeks after exposure. Eye: Severe acid burns, photophobia (abnormal sensitivity to light), lacrimation, conjunctivitis, corneal clouding, and blindness. Skin: Severe acid burns, ulcers, and dermal thickening. Ingestion: Severe irritation or burns of the mouth, throat, esophagus, and gastrointestinal tract, and nausea and vomiting. Subclinical increase of liver enzymes or mild renal (kidney) injury may occur. Carcinogenicity: IARC, NTP, and OSHA do not list phosphorus trichloride as a carcinogen. Medical Conditions Aggravated by Long-Term Exposure: Respiratory and bone disorders. Chronic Effects: Asthma-like syndrome followed by a chronic chemical pneumonitis or emphysema. Chronic phosphorus poisoning causes osteomyelitis (inflammation of the bone marrow and adjacent bone) of the jaw bones.</div>				<div>HMIS H 4* F 0 R 2 * Chronic Effects PPE Sec. 8</div>	
<small>Copyright © 1996 by Genium Publishing Corporation. Any commercial use or reproduction without the publisher's permission is prohibited. Judgment as to the suitability of information herein for the purchaser's purposes are necessarily the purchaser's responsibility. Although maximum care has been taken in the preparation of such information, Genium Publishing Corporation extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the purchaser's intended purposes or for consequences of its use.</small>					

MATERIAL SAFETY DATA SHEETS

Do you know where yours are kept?

Genium Publishing Corp.		Material Safety Data Sheet Collection	
One Genium Plaza Schenectady, NY 12304-4690 (518) 377-8854		Phosphorus Trichloride	MSDS No. 110
		Date of Preparation: 10/82	Revision: B, 4/96
Section 1 - Chemical Product and Company Identification 48			
Product/Chemical Name: Phosphorus Trichloride Chemical Formula: PCl ₃ CAS Number: 7719-12-2 Other Designations: phosphorus yellow chloride, phosphorus chloride, trichlorophosphine Derivation: By reaction of yellow phosphorus with chlorine. General Use: In the process of depositing metal on rubber, as a chemical intermediate in the production of organophosphate pesticides, agricultural chemicals, surfactants, pigments, job reagents, gas additives, plasticizers, dyestuffs, germicidal preparations, medications, as a finishing agent for textiles; as a chlorinating agent and catalyst; and in the manufacture of phosphorus oxychloride and phosphorus pentachloride. Vendors: Consult the latest <i>Chemical Week Buyer's Guide</i> . (73)			
Section 2 - Composition / Information on Ingredients			
Phosphorus Trichloride: 99.5 % (pure), 98.5% (technical) Trace Impurities: May contain unreacted phosphorus. OSHA PELs 8-hr TWA: 0.5 ppm (3 mg/m ³) NIOSH REL 10-hr TWA: 0.2 ppm (1.5 mg/m ³) STEL: 0.5 ppm (3 mg/m ³) DFG (Germany) MAK TWA: 0.5 ppm (3 mg/m ³) Category 1: Local irritants Peak Exposure Limit: 1.0 ppm (3 mg/m ³), 5 min, momentary value, 8 per shift 8-hr TWA: 0.2 ppm (1.5 mg/m ³) STEL: 0.5 ppm (3 mg/m ³) IDLH Level 25 ppm ACGIH TLVs TWA: 0.2 ppm (1.1 mg/m ³) STEL: 0.5 ppm (2.8 mg/m ³)			
Section 3 - Hazards Identification			
☆☆☆☆ Emergency Overview ☆☆☆☆ Phosphorus trichloride exists as a clear, colorless to yellow, fuming, nonflammable liquid with an irritating, pungent, acid-like odor. Handle with extreme caution! It is extremely corrosive to the skin, eyes, and respiratory tract. It is a strong oxidizer and reacts exothermically (gives off heat) with water.			
Wilson Risk Scale R 2 I 4 S 4 K 1			
Potential Health Effects Primary Entry Routes: Inhalation and skin and eye contact. Target Organs: Respiratory tract, skin, and eyes. Acute Effects Inhalation: Coughing, burning in the nose, throat and eyes, lacrimation (tearing), necrosis (tissue destruction) of the nostrils, mouth ulcers, pharyngeal irritation, oppressive feeling in the chest, difficulty breathing, respiratory tract irritation, nausea, vomiting, hypoxemia (abnormal oxygenation of arterial blood), decrease in pulmonary function tests, and pulmonary edema (fluid in lungs) which may be delayed from 2 to 24 hr. A severe asthmatic bronchitis has occurred 1 to 8 weeks after exposure. Eye: Severe acid burns, photophobia (abnormal sensitivity to light), lacrimation, conjunctivitis, corneal clouding, and blindness. Skin: Severe acid burns, ulcers, and dermal thickening. Ingestion: Severe irritation or burns of the mouth, throat, esophagus, and gastrointestinal tract, and nausea and vomiting. Subclinical increase of liver enzymes or mild renal (kidney) injury may occur. Carcinogenicity: IARC, NTP, and OSHA do not list phosphorus trichloride as a carcinogen. Medical Conditions Aggravated by Long-Term Exposure: Respiratory and bone disorders. Chronic Effects: Asthma-like syndrome followed by a chronic chemical pneumonitis or emphysema. Chronic phosphorus poisoning causes osteomyelitis (inflammation of the bone marrow and adjacent bone) of the jaw bones.			
HMIS H 4 F 0 R 2 Chronic Effects PPE See 8			

MSDS No. 110		Phosphorus Trichloride	4/96
Section 4 - First Aid Measures			
Inhalation: Remove exposed person to fresh air, monitor for respiratory distress, and administer 100% humidified supplemental oxygen with assisted ventilation. Eye Contact: Do not allow victim to rub or keep eyes tightly shut. Gently lift eyelids and flush immediately and continuously with flooding amounts of water until transported to an emergency medical facility. Consult a physician or ophthalmologist immediately. Skin Contact: Quickly remove contaminated clothing. Rinse with flooding amounts of water for at least 15 min. Wash exposed area with soap and water. For reddened or blistered skin, consult a physician. Ingestion: Never give anything by mouth to an unconscious or convulsing person. Contact a poison control center. Unless the poison control center advises otherwise, have the conscious and alert person drink small amounts of water or milk. Do not induce vomiting. After first aid, get appropriate in-plant, paramedic, or community medical support. Note to Physicians: Observe for 24 hr after inhalation exposure because of delayed ARDS. For respiratory tract irritation, monitor arterial blood gases and perform chest x-ray and pulmonary function tests. If bronchospasm and wheezing occur, consider treatment with inhaled sympathomimetic agents. Also consider early administration of corticosteroids (such as methylprednisolone 1 g iv as a single dose) in an attempt to prevent the later development of pulmonary edema. Treat dermal burns with standard topical therapy. Asymptomatic transient elevations of LDH have been observed. With chronic exposure, increase in leukocyte counts with neutrophilia have been described. Special Precautions/Procedures: Emergency personnel should protect against contamination while aiding exposure victims.			
Section 5 - Fire-Fighting Measures			
Flash Point: Noncombustible Autoignition Temperature: None reported. LEL: None reported. UEL: None reported. Retting/Quenching Media: Use extinguishing agents appropriate to surrounding fire. Unusual Fire or Explosion Hazards: Phosphorus trichloride reacts with water giving off heat and hydrochloric and phosphoric acid fumes. It may generate flammable and potentially explosive hydrogen gas when in contact with many common metals. Hazardous Combustion Products: Chlorides, phosphorus oxides, phosphine, hydrogen chloride, and phosphoric acid. Fire-Fighting Instructions: If feasible and without undue risk, move containers from flat hazard area. Otherwise, cool fire-exposed containers with water spray until well after the fire is extinguished. Do not get water inside containers. Do not release runoff from fire control methods to sewers or waterways. Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operating in pressure-demand or positive-pressure mode. Structural firefighters' protective clothing is not effective for phosphorus trichloride. Wear chemical protective clothing specifically recommended by the manufacturer or shipper. However, chemical protective clothing may not provide thermal protection.			
Section 6 - Accidental Release Measures			
Spill/Leak Procedures: Immediately notify safety personnel, evacuate all unnecessary personnel, remove heat and ignition sources and combustibles, and isolate (at least 150 ft in all directions) and ventilate spill area. Cleanup personnel should protect against inhalation and skin and eye contact. Small Spills: Cover spilled phosphorus trichloride with dry sand and then cover this with excess (1:1 mix) soda ash-saturated lime. Saturate the water with very large amounts of water, mix well, and contain for disposal. Large Spills: Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Cleanup: Neutralize any residue with lime, soda ash, or sodium bicarbonate. Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).			
Section 7 - Handling and Storage			
Handling Precautions: Workers handling phosphorus trichloride must have special training. Avoid any vapor inhalation and contact with skin or eyes. Use only with ventilation sufficient to maintain airborne concentrations below hazardous levels. Wear appropriate personal protective clothing and eye protection. Keep away from combustibles, water, and other incompatibles (See 10). Storage Requirements: Store in tightly closed, corrosion resistant containers in a cool, dry, well-ventilated area away from combustibles and other incompatibles (See 10). Do not store on wooden floors or shelves.			

4/96		Phosphorus Trichloride	MSDS No. 110
Section 8 - Exposure Controls / Personal Protection			
Engineering Controls: Enclose all operations to prevent vapor dispersion into workplace. Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations as low as possible. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source. Administrative Controls: Consider replacement and periodic medical exams with emphasis on the respiratory tract, skin, eyes, jaws, teeth, and liver. Monitor for the development of an asthma-like syndrome or emphysema. Educate workers about the hazards of phosphorus trichloride and train in work practices which minimize exposure. In first aid, and in emergency procedures. Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For concentrations ≤ 10 ppm, wear any SCBA with a full facepiece or any supplied-air respirator with a full facepiece. For concentrations > 25 ppm, wear any supplied-air respirator that has a full facepiece and is operated in a pressure demand or other positive pressure mode. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas. Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and goggles to prevent skin contact. Teflon, with a breakthrough time of > 4 hr, is a recommended material for PPE. Butyl rubber, fluorocarbon rubber, and chlorinated polyethylene are also recommended. Natural rubber, neoprene, nitrile rubber, and polyvinyl chloride are not recommended materials for PPE. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses. Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area. Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove phosphorus trichloride from your shoes and clean personal protective equipment. Discard leather shoes. Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using phosphorus trichloride, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.			
Section 9 - Physical and Chemical Properties			
Physical State: Liquid Appearance and Odor: Colorless to yellow liquid; pungent odor. Vapor Pressure: 100 mm Hg at 70 °F (21 °C); 385 mm Hg at 131 °F (55 °C) Saturated Vapor Density (Air = 1.2 kg/m ³ , 0.075 lb/ft ³): 1.79 kg/m ³ , 0.112 lb/ft ³ Formula Weight: 137.35 Specific Gravity (H ₂ O=1, at 4 °C): 1.574 at 70 °F (21 °C) Water Solubility: Reacts exothermically (gives off heat). Other Solubilities: Benzene, carbon tetrachloride, chloroform, carbon disulfide, ether, carbon disulfide; decomposes in alcohol. Boiling Point: 169 °F (75.5 °C) Freezing Point: -164 °F (-91 °C) Refractive Index: 1.516 at 57 °F (14 °C) Surface Tension: 29.1 dyn/cm at 68 °F (20 °C) Critical Temperature: 547 °F (286 °C) Ionization Potential: 9.91 eV			
Section 10 - Stability and Reactivity			
Stability: Phosphorus trichloride is stable at room temperature in closed containers under normal storage and handling conditions. It fumes in moist air. Polymerization: Hazardous polymerization cannot occur. Chemical Incompatibilities: Water (gives off heat and evolves hydrogen chloride and diphosphane gas), alkalis, acetic acid and other carboxylic acids, aluminum, potassium, cesium, sodium, calcium, chlorine, organic matter, diallyl phosphite + allyl alcohol, dimethyl sulfide, nitric acid, sulfuric acid, fluorine, lead dioxide, hydroxylamine, indane monosulfide, chemically active metals (generates hydrogen), alcohol (is decomposed by), chloroacene + sodium, dimethyl sulfide, sodium peroxide, oxygen (above 100 °C), tetraethyl lead, chromium pentoxide, diallyl phosphite + allyl alcohol, fluorine. Self-Heated/Unstable: Triethylamine, hydroxylamine, and selenium dioxide. Phosphorus trichloride corrodes most common construction materials. Conditions to Avoid: A void contact with combustibles, water, and other incompatibles. Hazardous Decomposition Products: Thermal oxidative decomposition of phosphorus trichloride can produce toxic fumes of chlorides, phosphorus oxides, phosphine, hydrogen chloride, and phosphoric acid.			

Hazardous Materials Table

49 CFR 172.101

§172.101 HAZARDOUS MATERIALS TABLE

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifica- tion Num- bers	PG	Label Codes	Special provisions	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
D	Accellerene, <i>see</i> p-Nitrosodimethylaniline.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Accumulators, electric, <i>see</i> Batteries, wet etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Accumulators, pressurized, pneumatic or hydraulic (containing non-flammable gas).	2.2	NA1956	.....	2.2	.....	306	306	None	No limit	No limit	A	.....
A	Acetal	3	UN1088	II	3	T7	150	202	242	5 L	60 L	E	.....
	Acetaldehyde	3	UN1089	I	3	A3, B16, T20, T26, T29	None	201	243	Forbidden	30 L	E	.....
	Acetaldehyde ammonia	9	UN1841	III	9	.....	155	204	240	200 kg	200 kg	A	34
	Acetaldehyde oxime	3	UN2332	III	3	B1, T8	150	203	242	60 L	220 L	A	.....
	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass.	8	UN2789	II	8, 3	A3, A6, A7, A10, B2, T8	154	202	243	1 L	30 L	A	.....
	Acetic acid solution, with more than 10 percent but not more than 80 percent acid, by mass.	8	UN2790	II	8	A3, A6, A7, A10, B2, T8	154	202	242	1 L	30 L	A	.....
	Acetic anhydride	8	UN1715	II	8, 3	A3, A6, A7, A10, B2, T8	154	202	243	1 L	30 L	A	40
	Acetone	3	UN1090	II	3	T8	150	202	242	5 L	60 L	B	.....
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	6.1	2, A3, B9, B14, B32, B76, B77, N34, T38, T43, T45	None	227	244	Forbidden	30 L	D	25, 40, 49
	Acetone oils	3	UN1091	II	3	T7, T30	150	202	242	5 L	60 L	B	.....
	Acetonitrile	3	UN1648	II	3	T14	150	202	242	1 L	60 L	B	40
	Acetyl acetone peroxide with more than 9 percent by mass active oxygen.	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Acetyl benzoyl peroxide, solid, or with more than 40 percent in solution.	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Acetyl bromide	8	UN1716	II	8	B2, T12, T26	154	202	242	1 L	30 L	C	40
	Acetyl chloride	3	UN1717	II	3, 8	A3, A6, A7, B100, N34, T18, T26	None	202	243	1 L	5 L	B	40
	Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water.	Forbidden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

§ 172.101

49 CFR Ch. I (10-1-97 Edition)

Hazardous Materials Table

Column 1 - Symbols

- +** Fixes the proper shipping name, hazard class and packing group without regard to whether the material meets that class or packing group or any other hazard class
- A** Restricts the application if intended for transportation by aircraft
- D** Proper shipping name only for domestic transportation.

Hazardous Materials Table

Column 1 - Symbols

I For use on International transportation

W Restricts the application if intended for
transportation by water

Column 2

Proper Shipping Name

- Limited to those shown in Roman type
 - ***Not italics***
- Punctuation marks and words in *italics*
 - ***or***
 - ***see***
 - ***concentration ranges***
 - ***mono***
- Technical names
- “Waste”
- Word “mixture” or “Solution”

Column 3

Hazard Class or Division

- Designates which Hazard Class and/or Division number matches up with the proper shipping name
- Forbidden

Column 4

Identification Numbers

- Contains UN or NA numbers assigned to each proper shipping name
 - **UN (United Nations)**
 - **NA (North American)**
 - Only legal for domestic transportation
 - Many are in the NA9000 series
 - Most are preceded with a “D” in column 1

Column 5

Packing Groups

- Packing groups indicate the degree of danger presented by the material
- Packing Group
 - I = great danger
 - II = medium danger
 - III = minor danger
- No packing groups assigned to Class 1, 2, 7, combustible liquids, and ORM-D materials

Column 6

Labels

- Labels in this column are what get affixed to the package / container
- First label shown for each entry represents the primary hazard of the material
 - **Primary labels have the hazard class listed on the bottom of the label**
 - **Secondary labels have no hazard class listed on the bottom of the label**
- Subsidiary hazard labels - Section 172.402

Column 7

Special Provisions

- References to special instructions contained in Section 172.102
- Referenced by number only
- Apply to bulk and non-bulk packagings
- Codes:

A - Aircraft	R - Rail
B - Bulk, but not IM tanks	T - IM tanks only
H - Highway	W - Water
N - Non bulk	

Column 8

Packaging Authorizations

- All numeric references are found in 49 CFR Part 173
- 8A - Exceptions
 - **are in addition to those in Subpart A of Part 173**
- 8B - Non-bulk packaging
- 8C - Bulk packaging
- None = means no packaging exceptions are authorized in column A, B, or C above

Column 9

Quantity Limitations

- Limits are the maximum amount/quantity that:
 - can be put in any one package,
 - and offered for transportation
- 9A = Passenger aircraft or Railcar
- 9B = Cargo Aircraft only

Column 10

Vessel Stowage Requirements

- Authorized storage locations on board both passenger and cargo vessels
- Codes in Column A
 - A = On or under deck**
 - B = On or under deck, but only On Deck on passenger vessels**
 - C = Must be stowed on deck only, either vessel**
 - D = Must be stowed on deck on Cargo vessels and not allowed on passenger**
 - E = On or under deck, Cargo vessel only**

PACKAGING/MARKINGS

Hazardous Materials Regulations
International Civil Aviation Organization
International Marine Organization

General Packaging Requirements

- Packaging must be referenced to 49CFR Part 173 in column 8 of HM table (Section 172.101)
- The more hazardous the material, the more restrictive will be the packaging
 - PG I or PG II or PGIII
 - If more than one Packing Group is listed Reference Section 173 Subpart D to determine which one to use.

General Packaging Requirements

- Performance Oriented Packaging (POP)
 - Drop
 - **PGI = 5.9 feet**
 - **PGII = 3.9 feet**
 - **PGIII = 3.0 feet**
 - Leakproofness
 - Hydrostatic pressure
 - Stacking
 - Vibration tests



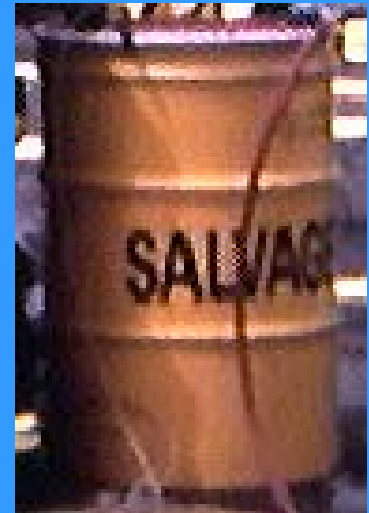
General Packaging Requirements

- General requirements for packaging and packages (Sec. 173.24)
- Includes
 - New and Reused
 - Spec and Non-Spec packages
- Quantity limitations are not given in packaging requirements

General Packaging Requirements

Packaging and Exceptions

- Salvage Drums are for transporting damaged, defective, or leaking packages for the purpose of repackaging or disposal
 - Must have sufficient cushioning and absorption material
 - Have same markings as original package



General Packaging Requirements

Packaging and Exceptions

- Reuse of Packagings:
 - A previously used packaging may be reused for the shipment of Hazardous Waste to designated facilities
 - Transportation by highway only
 - Package is not offered for transport less than 24 hours after it is finally closed, and inspected for leakage 49CFR 173.12(c)

General Packaging Requirements

According to the **Hazard Communication Std.** all containers must have the correct markings / labels. The label must include the following:

- **Identity** of the hazardous substance
- Appropriate **hazard warning** regarding both potential physical safety and health hazards
- Name and address of the **manufacturer**, importer, or other responsible party.

29 CFR 1910.1200 and GISO Title 8, Sec 5194

General Packaging Requirements

- General Packaging of Class I Materials
 - Section 173.24, 24a, & 24b
 - Must meet Packing Group II requirements

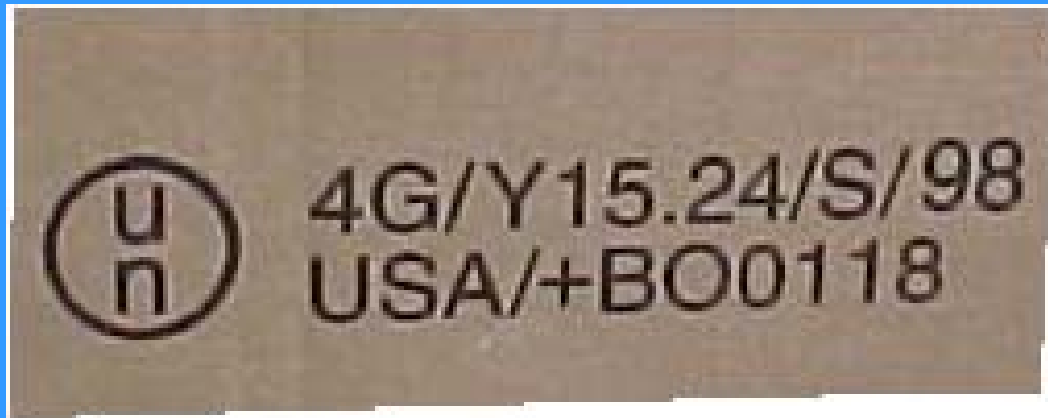
See the text and 49CFR more more details

General Packaging Requirements

- Non-Bulk Packaging for classes 2-6, 8 and 9 materials
 - Class 2 materials use hazard zones instead of Packing Groups
 - When more than one Packing Group is listed in Column 5, Reference Section 173 Subpart D to determine which one to use.
 - Class 6.1 uses both Hazard Zones (Inhalation Hazards) and Packing Groups

General Package Marking Requirements

- Manufacturer stamped indicating the standards to which the package was made.



- Those put on the package by person(s) offering the material for transportation

General Package Marking Requirements

4G/Y 15.24/S/98 USA/+BO0118

- 4G Fiberboard Box
- Y For packing groups II or III
- 15.24 Max gross packaging is 15.24Kg
- S Solids or inner packages
- 98 Year of manufacture
- USA Authorized in USA
- BO0118 Manufacturer information

General Package Marking Requirements

Shipper Package Markings

- Durable, in English and printed on or affixed to the surface of a package, label, tag, or sign
- On background that sharply contrasts in color
- Unobscured by labels or attachments
- Located away from other markings that could reduce its effectiveness

MARINE POLLUTANT

Sodium cyanide

Contient 98% min. Granules

Kg 60 net



TRES TOXIQUE

Cyanure de sodium

Titre 98% min. Granules

Kg 60 net

1. 2012-11-28: 1. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
2. 2012-11-28: 2. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
3. 2012-11-28: 3. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
4. 2012-11-28: 4. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
5. 2012-11-28: 5. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
6. 2012-11-28: 6. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
7. 2012-11-28: 7. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
8. 2012-11-28: 8. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
9. 2012-11-28: 9. Tous les produits pour l'agriculture sont classés sans danger et sans danger.
10. 2012-11-28: 10. Tous les produits pour l'agriculture sont classés sans danger et sans danger.

EniChem SpA
Piazza Italia, 10 - 20121 Milano (Italy)
Tel. +39 02 58 58 58 58

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

EniChem SpA

SODIUM CYANIDE

HEALTH

FLAMMABILITY

REACTIVITY

PHYSICAL PROPERTIES

CAUTION

SAFETY

ENVIRONMENT

REGULATION

EniChem

EniChem

EniChem

EniChem

EniChem

EniChem

EniChem

EniChem

EniChem

EniChem

EniChem

Made in Italy

General Package Marking Requirements

BASIC / General Markings for non-bulk packaging

- Proper Shipping Name from Column 2
- UN or NA Identification Number from Column 4
- Exemption Numbers (DOT-E)
- Name and Address when shipped by highway

General Package Marking Requirements

Additional to the BASIC Markings for non-bulk packaging

- Orientation Arrows (Sec. 172.312)
- Inhalation Hazard with required labels
- Poison shall be embossed on Plastic outer packages for Division 6.1 materials
- ORM-D if required
- Explosives with EX-number

General Package Marking Requirements

General Markings for bulk packaging

- Identification numbers
 - Orange Panel
 - Across the center of the primary hazard placard
 - If no placard required use:
 - orange panel or
 - white placard

General Package Marking Requirements

General Markings for **bulk packaging**

- Proper Shipping Name on two opposite sides
 - Appropriate Common Name
 - Displayed on each side
- Owner or Lessee's name
- Must represent what the package actually contains inside

LABELS

49 CFR Section 172.400

General Labeling Requirements

- The regulations require each person who offers a package containing a hazardous material for transportation to affix the label(s) appropriate for the material being shipped.
- Shipper is responsible to determine the proper label, number of, Location, multiple labeling requirements, or if any are needed on the package

General Labeling Requirements

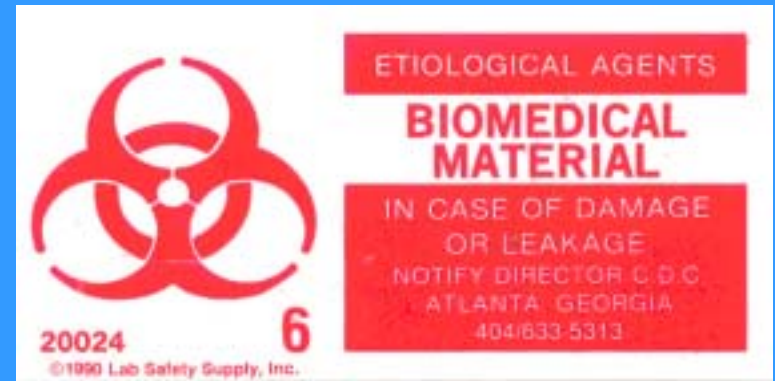
- **Carrier** by air, rail, water or **HIGHWAY** may not accept a package containing a hazardous material unless the package has been properly labeled for the material.
- Each **Carrier** is to maintain an adequate supply of warning labels to replace lost or destroyed labels on HM packages

General Labeling Requirements

- Column 6 of the HM table Sec. 172.101
- Hazard Precedence table
 - When material to be shipped is not listed in the HM table but meets one or more definitions
- Mixed and Consolidated Packaging (Labpack)
 - Different compatible hazard classes within same outside package
 - Label for each hazard class on the outside

General Labeling Requirements

- Multiple Hazard Labeling
 - Primary
 - Secondary
- Additional Labeling Requirements
 - Cargo Aircraft Only
 - EMPTY
 - ETIOLOGIC AGENT
 - Radioactive
- Exceptions
- Label Specifications



HAZARDOUS WASTE

STATE & FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

GENERATOR INFORMATION:

NAME UCSD Environmental Management Facility
ADDRESS 9500 Gilman Drive PHONE 858-534-9695
CITY La Jolla STATE CA ZIP 92093

EPA /MANIFEST ID NO. /DOCUMENT NO. CAD 020 210 407 / 99610838

EPA WASTE NO. D005 D007 CA WASTE NO. 181 ACCUMULATION START DATE 03-17-2000

CONTENTS, COMPOSITION: Lithium Battery
Profile#1590-10

PHYSICAL STATE:

☐ SOLID ☐ LIQUID

HAZARDOUS PROPERTIES: ☐ FLAMMABLE

☐ TOXIC

☐ CORROSIVE ☐ REACTIVITY ☐ OTHER

"RQ" Waste Lithium Battery 9 UN3090 PGII (D007)

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

CP-3

DOCUMENTATION

SHIPPING PAPER REQUIREMENTS

General Shipping Paper Requirements

If both Hazardous and Non-Hazardous are being shipped at the same time the description of the HM must be:

- Entered first, **or**
- Entered in a color which clearly contrasts, **or**
- Identified by an “X” or “RQ” in a column headed “HM”

Carrier

Carrier's No.

at _____ 19 _____ from _____
the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as between each party or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Destination _____ State _____ Zip Code _____ County _____

Route _____

Delivering Carrier	Car or Vehicle Initials	No.
--------------------	-------------------------	-----

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*Weight (Sub. to Car.)	Class or Rate	Check Column	<p>Subject to Section 7 of Conditions of applicab bill of lading, if this shipment is to be delivered the consignee without recourse on the consignor, it consignor shall sign the following statement.</p> <p>The carrier shall not make delivery of this shipment without payment of freight and all other law charges.</p> <p>(Signature of Consignor.)</p> <p>If charges are to be prepaid, write or stamp here, "To Be Prepaid."</p> <p>Received \$ _____ to apply i prepayment of the charges on the property describe hereon.</p> <p>Agent or Cashier</p> <p>Per _____ (The signature here acknowledges only the amou prepaid.)</p> <p>Charges Advanced:</p> <p>\$ _____</p>
					<p>Subject to Section 7 of Conditions of applicab bill of lading, if this shipment is to be delivered the consignee without recourse on the consignor, it consignor shall sign the following statement.</p> <p>The carrier shall not make delivery of this shipment without payment of freight and all other law charges.</p> <p>(Signature of Consignor.)</p> <p>If charges are to be prepaid, write or stamp here, "To Be Prepaid."</p> <p>Received \$ _____ to apply i prepayment of the charges on the property describe hereon.</p> <p>Agent or Cashier</p> <p>Per _____ (The signature here acknowledges only the amou prepaid.)</p> <p>Charges Advanced:</p> <p>\$ _____</p>

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."

NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Uniform Freight Classification."

‡Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

Shipper, Per _____ Agent, Per _____

Permanent post-office address of shipper.

REDIFORM 65695

POLY PAK (50 SETS) 6P695

carbonless

[illegible]

Element		Date	Page 1 of _____
Site Address		Drum Type: P F M	Drum Size: 56 30 15 5
Profile Number	Manifold Number	Manifold Line Number	Drum Number

[illegible]

Special instructions

Shipping Paper

Lab-Pack Inventory Sheet

HM Shipping Paper must include the following min.data

- Proper Shipping Name (Column 2)
- Hazard Class (Column 3)
- UN/NA Identification Number (Column 4)
- Packing Group, if required (Column 5)
- Total Quantity by weight, volume or ?
- Emergency Response Telephone #
- Shippers Certification Statement

General Shipping Paper Requirements (RCRA Wastes)

- Sodium Hydroxide Solution, 8, UN1824, PGII
- If a generic name is used, then a “Technical Name” is required
- **Compounds, cleaning liquid,
(Sodium Hydroxide), 8, NA1760, PGII**
- **Corrosive Liquid, Basic, Inorganic, n.o.s.,
(Sodium Hydroxide), 8, UN3262, PGII**

General Shipping Paper Requirements (Non-RCRA Wastes)

- If the waste (example: waste oil) being shipped is not a RCRA hazardous waste then it is written:
- **Non-RCRA Hazardous Waste, Liquid,(waste oil)**
or
- **Non-RCRA Waste oil**

There is NO hazard class or ID# needed

General Shipping Paper Requirements

- Total quantity is to be included either before and/or after the basic description

**1 dm, Paint related material, (Acetone),
3, UN1263, pg I, 244 lbs.**

NO.	DESCRIPTION	HZ. CL.	ID. NO.	PK. GR.	QUANTITY

- The type of packaging, such as a “box”, “drum”, “cylinder”, etc is not an entry required by HM regulations

General Shipping Paper Requirements

Shippers Certification Statement

- Required entry, **except by highway if:**
 - Is in a cargo tank supplied by carrier
 - Transported by shipper as a private carrier, unless is to be reshipped or transferred from one carrier to another
- Printed manually or mechanically on the shipping papers
- Signed legibly Mechanical method OKAY unless preprinted signature

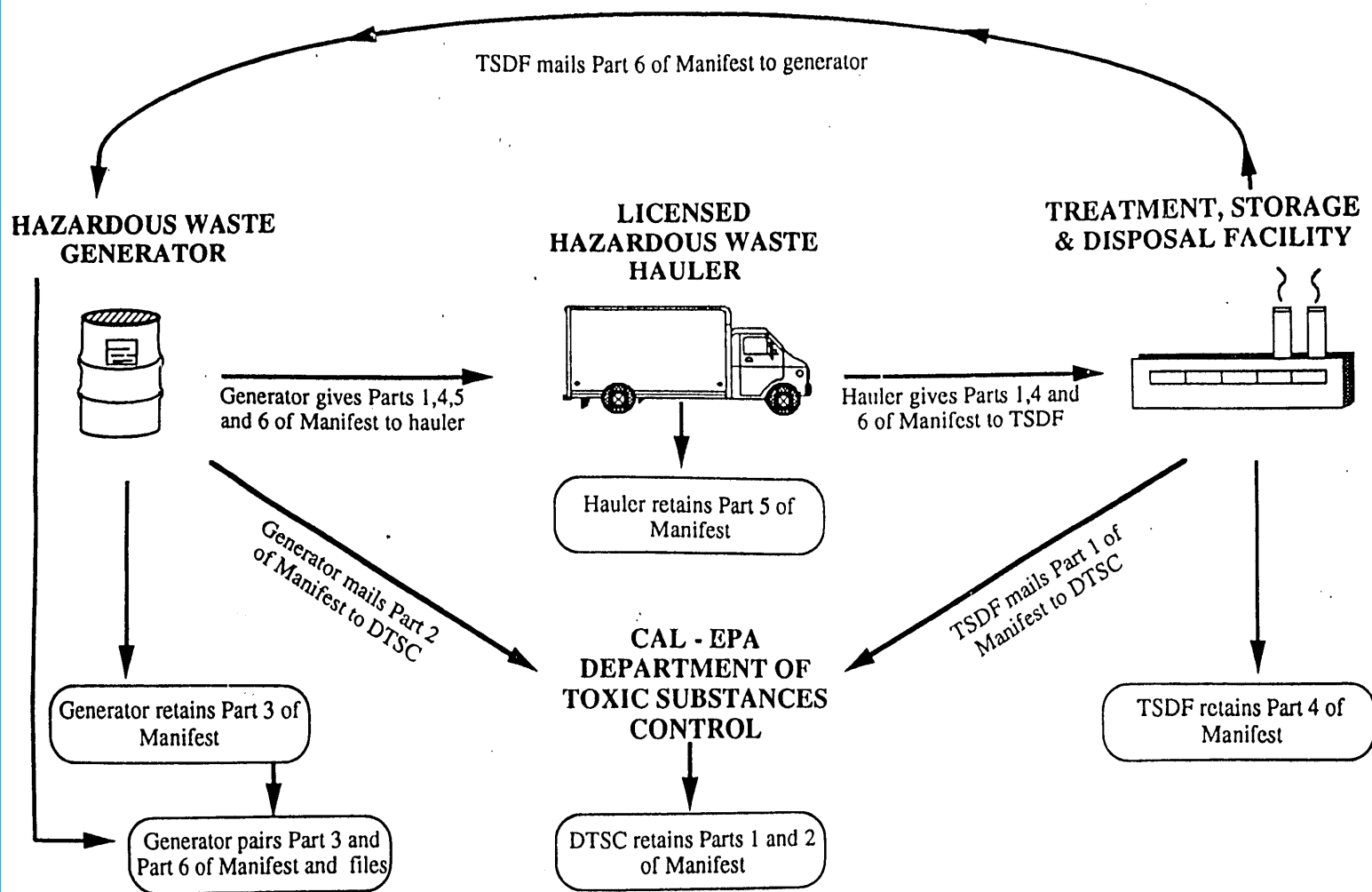
General Shipping Papers

- Highway Shipments
 - Bill of Lading
 - Uniform Hazardous Waste Manifest
- Railroad Shipments
 - Waybills
 - Consist
 - Switching Orders
- Carriage by Water
 - Dangerous Cargo Manifest

General Shipping Papers Accessibility

- When the driver is at the vehicle controls, must be at his **immediate reach** when restrained by the lap belt
- Papers must be **clearly distinguishable** when mixed with other papers
- **Readily visible** to a person entering the driver's compartment
- **In a holder mounted** on the inside of the door, on the drivers side of the vehicle
- If driver not in vehicle; must be in **holder or on the drivers seat in the vehicle**

CALIFORNIA'S HAZARDOUS WASTE MANIFEST SYSTEM



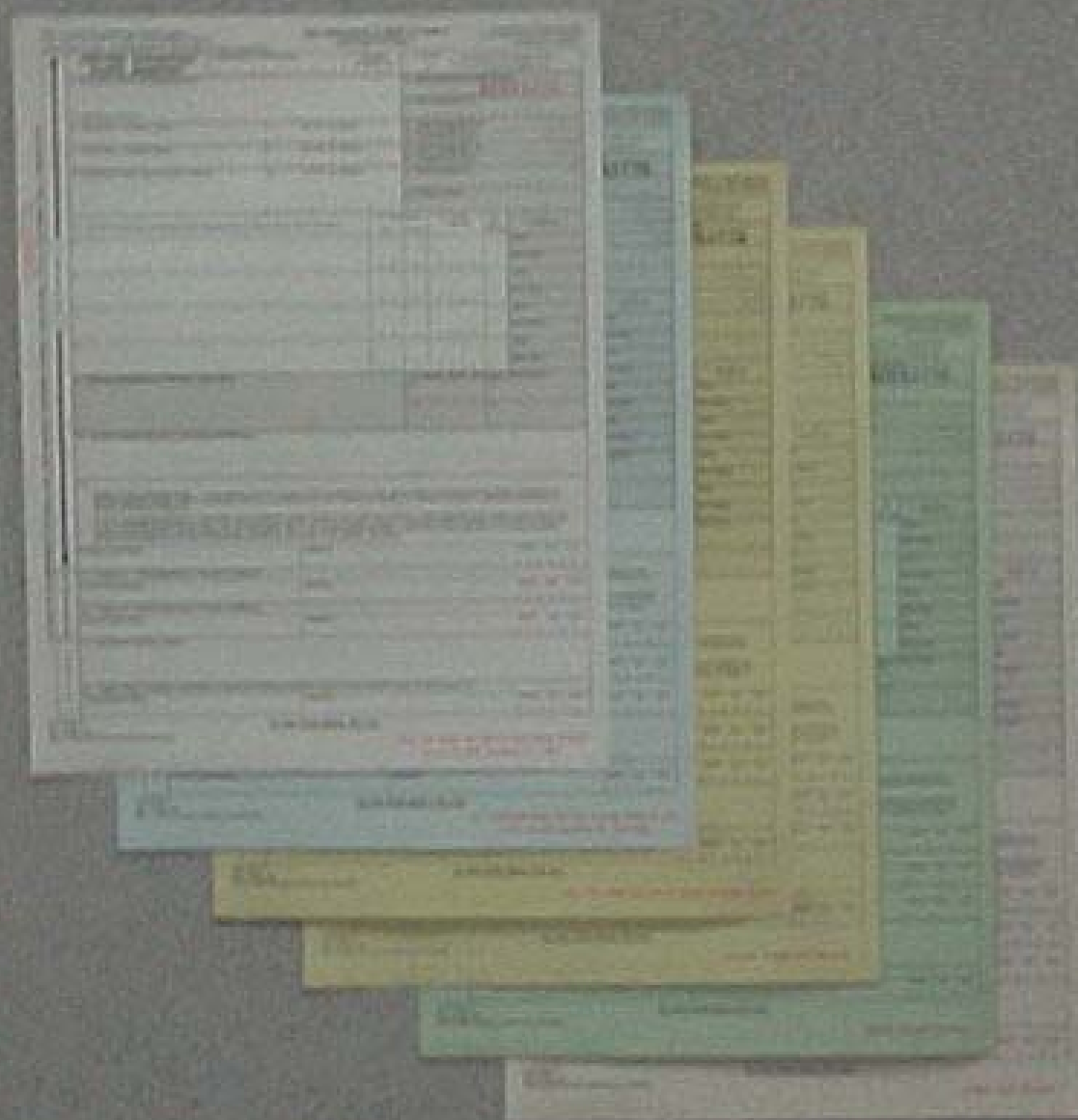
Shipping Papers

UNIFORM HAZARDOUS WASTE MANIFEST

Six part document

- TSDF Mails to DTSC (White)
- Generator mails to DTSC (Blue)
- Generator Retains (Yellow)
- TSDF mails to Generator (Yellow)
- Hauler Retains (Green)
- TSDF Retains (White)

If Generator does not receive copies within 45 days must contact DTSC - and scream



Uniform Haz. Waste Manifest Gen/Transporters/TSDF

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-99)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
	C A D 0 2 0 2 1 0 4 0 7			
3. Generator's Name and Mailing Address	A. State Manifest Document Number		99610838	
UCSD Environmental Management Facility 9500 Gilman Drive, La Jolla, CA 92093-0958	B. State Generator's ID			
4. Generator's Phone (858) 534-9695 Pick-Up EMF	C. State Transporter's ID (Reserved)		3635	
5. Transporter 1 Company Name	6. US EPA ID Number	D. Transporter's Phone		
K E M	C A R 0 0 0 0 2 0 7 4 3	619-409-9292		
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID (Reserved)		
		F. Transporter's Phone		
9. Designated Facility Name and Site Address	10. US EPA ID Number	G. State Facility's ID		
Kinsbursky Brothers Inc. 1314 N. Lemon Street Anaheim, CA 92801	C A D 0 8 8 5 0 4 8 8 1	H. Facility's Phone		
		714-738-8516		
11. US DOT ID	12. Containers	13. Total	14. Unit	

99610838
CALIFORNIA, CALL 1-800-852-7550

Uniform Haz. Waste Manifest DOT & Special information

90 ALL THE NATIONAL RESPONSE CENTER 1-800-424-8802: WITHIN CALI GENERATOR	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers		13. Total	14. Unit	I. Waste Number
			No.	Type	Quantity	Wt/Vol	
	a. RQ Waste Lithium Battery 9 UN3090 PGII (D007)						State 181
							EPA/Other D005 D007
	b.						State
							EPA/Other
	c.						State
							EPA/Other
	d.						State
							EPA/Other
J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above					
11a. Profile #1590-10, Drum #1-3 (3x30)		a.		b.			
		c.		d.			
15. Special Handling Instructions and Additional Information							
Wear Proper Protective Equipment When Handling Material If Undeliverable, Return To Generator. 24 Hour Emergency Phone Number (800) 424-9300 (CHEMTREC).							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed,							

Uniform Haz. Waste Manifest

Signature section

IN CASE OF AN EMERGENCY OR SPILL, CALL ↓ TRANSPORTER FACILITY	16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR , if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.		
	Printed/Typed Name		Signature Month Day Year <div style="text-align: right;"> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> </div>
	17. Transporter 1 Acknowledgement of Receipt of Materials		
	Printed/Typed Name		Signature Month Day Year <div style="text-align: right;"> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> </div>
	18. Transporter 2 Acknowledgement of Receipt of Materials		
	Printed/Typed Name		Signature Month Day Year <div style="text-align: right;"> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> </div>
	19. Discrepancy Indication Space		
	20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.		
	Printed/Typed Name		Signature Month Day Year <div style="text-align: right;"> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> <div style="width: 20px; height: 15px; border: 1px solid black; display: inline-block;"></div> </div>

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

LAND DISPOSAL

RESTRICTION TREATMENT STANDARDS (LDR's)

[illegible]

E. LEE NOTIFICATION/CERTIFICATION INFORMATION REQUIRED BY E COL			
	Indemnity of the Insured (See ECOL Appendix Sheet E-10-100-000-000-000)	Transacting Company of New ECOL Member State (E COL sheet 000-000-000)	Indemnity within E COL Area E (Specifying the ECOL Standard E-10-100-000-000-000)
<input type="checkbox"/> 1.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 2.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 3.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 4.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 5.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 6.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 7.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 8.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 9.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 10.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 11.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 12.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000
<input type="checkbox"/> 13.	0000-000-000-000-000	0000-000-000-000-000	0000-000-000-000-000

FOR TECHNOLOGY-BASED TREATMENT TECHNOLOGIES ONLY, LIST THE APPLICABLE APPLICABLE
TREATMENT TECHNOLOGY NAME (E COL E-10-100-000-000-000) IN E COL, WETTER.

Notes: (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) (101) (102) (103) (104) (105) (106) (107) (108) (109) (110) (111) (112) (113) (114) (115) (116) (117) (118) (119) (120) (121) (122) (123) (124) (125) (126) (127) (128) (129) (130) (131) (132) (133) (134) (135) (136) (137) (138) (139) (140) (141) (142) (143) (144) (145) (146) (147) (148) (149) (150) (151) (152) (153) (154) (155) (156) (157) (158) (159) (160) (161) (162) (163) (164) (165) (166) (167) (168) (169) (170) (171) (172) (173) (174) (175) (176) (177) (178) (179) (180) (181) (182) (183) (184) (185) (186) (187) (188) (189) (190) (191) (192) (193) (194) (195) (196) (197) (198) (199) (200) (201) (202) (203) (204) (205) (206) (207) (208) (209) (210) (211) (212) (213) (214) (215) (216) (217) (218) (219) (220) (221) (222) (223) (224) (225) (226) (227) (228) (229) (230) (231) (232) (233) (234) (235) (236) (237) (238) (239) (240) (241) (242) (243) (244) (245) (246) (247) (248) (249) (250) (251) (252) (253) (254) (255) (256) (257) (258) (259) (260) (261) (262) (263) (264) (265) (266) (267) (268) (269) (270) (271) (272) (273) (274) (275) (276) (277) (278) (279) (280) (281) (282) (283) (284) (285) (286) (287) (288) (289) (290) (291) (292) (293) (294) (295) (296) (297) (298) (299) (300) (301) (302) (303) (304) (305) (306) (307) (308) (309) (310) (311) (312) (313) (314) (315) (316) (317) (318) (319) (320) (321) (322) (323) (324) (325) (326) (327) (328) (329) (330) (331) (332) (333) (334) (335) (336) (337) (338) (339) (340) (341) (342) (343) (344) (345) (346) (347) (348) (349) (350) (351) (352) (353) (354) (355) (356) (357) (358) (359) (360) (361) (362) (363) (364) (365) (366) (367) (368) (369) (370) (371) (372) (373) (374) (375) (376) (377) (378) (379) (380) (381) (382) (383) (384) (385) (386) (387) (388) (389) (390) (391) (392) (393) (394) (395) (396) (397) (398) (399) (400) (401) (402) (403) (404) (405) (406) (407) (408) (409) (410) (411) (412) (413) (414) (415) (416) (417) (418) (419) (420) (421) (422) (423) (424) (425) (426) (427) (428) (429) (430) (431) (432) (433) (434) (435) (436) (437) (438) (439) (440) (441) (442) (443) (444) (445) (446) (447) (448) (449) (450) (451) (452) (453) (454) (455) (456) (457) (458) (459) (460) (461) (462) (463) (464) (465) (466) (467) (468) (469) (470) (471) (472) (473) (474) (475) (476) (477) (478) (479) (480) (481) (482) (483) (484) (485) (486) (487) (488) (489) (490) (491) (492) (493) (494) (495) (496) (497) (498) (499) (500) (501) (502) (503) (504) (505) (506) (507) (508) (509) (510) (511) (512) (513) (514) (515) (516) (517) (518) (519) (520) (521) (522) (523) (524) (525) (526) (527) (528

[illegible]

DeMenno/Kerdoon - Waste Oil and Oily water - Filter Recycling Services
Copies must be retained for 5 years

LAND DISPOSAL RESTRICTION KEM form for Batteries

Kinsbursky Brothers Inc. Land Disposal Restriction Form

Manifest # 99010698 / Waste Stream Number (profile #) 1590-10
 Generator Name UGS EPA ID # CA00020210407
 Address 9800 Gilman Drive
 City LA JOLLA State CA Zip 92043

Please check the appropriate Box(es). Attach waste analysis data when available.

1. ☐ This waste is not prohibited from land disposal.
 The waste identified on the above referenced manifest can be land disposed without further treatment.
 I verify under penalty of law that I personally have examined and am familiar with the waste stream(s) through analysis and testing, or through knowledge of the waste, to support this verification. The waste complies with the treatment standards specified in CCR title 22, Division 4.5 chapter 12, article 4 and article 11 and all applicable prohibitions set forth in CCR title 22, section 66268.32 or RCRA section 3004 (4) (A) (2) (C) section 60249 (2)(3). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false verification including the possibility of a fine and imprisonment."

2. ☒ Pursuant to 40 CFR 268.2, I am verifying Kinsbursky Brothers Inc. that under the above listed manifest number, I am shipping a waste identified by the EPA waste number and subsequent listed below that is subject to land disposal restrictions as indicated."

All treatment standards listed as represented in 40 CFR §268.48 for RCRA Waste(s) only.

RCRA Waste Code	Waste description and subcategory	Technology Based Treatment Standard	Resource treatment standard
D001	<input type="checkbox"/> Ignitable Characteristic Solids (Lithium, aqueous batteries only)	DEACT and meet §268.48 standards	NA
D002	<input type="checkbox"/> Corrosive Characteristic	DEACT and meet §268.48 standards	NA
D003	<input type="checkbox"/> Reactive Characteristic Waste reactive subcategory based on 261.22 (a) (2) (2) and (3)	DEACT and meet §268.48 standards	NA
D004	<input type="checkbox"/> Acute Characteristic		5.8 mg/l TCLP and meet §268.48 standards
D005	<input checked="" type="checkbox"/> Debris Characteristic		21 mg/l TCLP and meet §268.48 standards
D006	<input type="checkbox"/> Cadmium Characteristic		0.11 mg/l TCLP and meet §268.48 standards
	<input type="checkbox"/> Cadmium Containing Batteries	BTREM	
D007	<input checked="" type="checkbox"/> Chromium Characteristic		6.0 mg/l TCLP and meet §268.48 standards
D008	<input type="checkbox"/> Lead Characteristic		0.75 mg/l TCLP and meet §268.48 standards
	<input type="checkbox"/> Lead Acid Batteries (over this standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded from regulations under the land disposal restriction of 40 CFR 268.48 as exempted under other EPA regulations (see 40 CFR 268.60)	BTREM	

RCRA
Codes

D009	<input type="checkbox"/> Mercury Characteristic ≥260mg/l total Hg (inorganic)	RMERC	
	<input type="checkbox"/> Mercury Characteristic ≤260 mg/l total Hg (inorganic)		0.025 mg/l TCLP and meet §268.48 standards
D010	<input type="checkbox"/> Selenium characteristic		5.7 mg/l TCLP and meet §268.48 standards
D011	<input type="checkbox"/> Silver characteristic		0.14 mg/l TCLP and meet §268.48 standards

	Listed waste from non-specific sources	Regulated constituent	Numeric treatment standard
F006	<input type="checkbox"/> Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum (2) Tin plating on carbon steel (3) Zinc plating (segregated basis) on carbon steel (4) Aluminum or zinc-aluminum plating on carbon steel (5) Clearing/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) Chemical etching and milling of aluminum.	Cadmium Chromium (Total) Cyanides (Total) Cyanides (Amenable) Lead Nickel Silver	0.11 mg/l TCLP 0.60 mg/l TCLP 590 mg/kg 30 mg/kg 0.75 mg/l TCLP 11 mg/l TCLP 0.14 mg/l TCLP
F007	<input type="checkbox"/> Spent cyanide plating bath solution from electroplating operations.	Cadmium Chromium (Total) Cyanides (Total) Cyanides (Amenable) Lead Nickel Silver	0.11 mg/l TCLP 0.60 mg/l TCLP 590 mg/kg 30 mg/kg 0.75 mg/l TCLP 11 mg/l TCLP 0.14 mg/l TCLP
F008	<input type="checkbox"/> Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium Chromium (Total) Cyanides (Total) Cyanides (Amenable) Lead Nickel Silver	0.11 mg/l TCLP 0.60 mg/l TCLP 590 mg/kg 30 mg/kg 0.75 mg/l TCLP 11 mg/l TCLP 0.14 mg/l TCLP
	<input type="checkbox"/> Other	For codes other than those listed above pre approval will be necessary.	

3. Does the waste listed above contain any underlying hazardous constituents as listed in 40 CFR §268.48 (check one)?
☐ No
☒ Yes (please indicate underlying constituents on attachment 1)
4. Does the material listed above meet the definition of debris (solid material exceeding a 60 mm particle size that is intended for disposal and that is: Manufactured object plant or animal matter; or natural geological material)?
☒ No
☐ Yes
5. California regulated waste only (please specify) 181
- The waste identified above must be treated to meet the applicable standards in CCR Title 22, Division 4.5, chapter 16 article 11.

I certify and warrant that the information that appears on this form and any appended documents is true and correct. I have correctly indicated how my waste is to be managed in accordance with 40 CFR 268. My certification is based on personal examination of the information submitted or is based on my inquiries of the individuals responsible for obtaining the information.

Name _____ Signature _____ Date _____

Signature

Page 3

Attachment 1 (page 2 of 2)

Underlying Hazardous Constituents

(Circle all that apply)

Regulated Constituent (organic)	NWW standard mg/kg	Regulated Constituent (organic)	NWW standard mg/kg	Regulated Constituent (organic)	NWW standard mg/kg
A2213	1.4	Carboulfian	1.4	trans-1,3-Dichloropropylene	18
Acenaphthylene	3.4	p-Chloroaniline	16	Dieldrin	0.13
Acenaphthene	3.4	Chlorobenzene	6.0	Diethylene glycol, diacarbamate	1.4
Acetone	160	2-Chloro-1,3-butadiene	0.28	Diethyl phthalate	28
Acetonitrile	18	Chlorodibromomethane	15	2,4-Dimethyl phenol	14
Acetophenone	9.7	Chloroethane	6.0	Dimethyl phthalate	28
2-Acetylaminofluorene	140	bis(2-Chloroethoxy)methane	7.2	Dimethlan	1.4
Acrylamide	23	bis(2-Chloroethoxy)ether	6.0	Di-n-butyl phthalate	28
Acrylonitrile	84	Chloroform	6.0	1,4-Dinitrobenzene	2.3
Aldicarb Sulfone	0.28	bis(2-Chloroisopropyl)ether	7.2	4,6-Dinitro-o-cresol	160
Aldrin	0.066	p-Chloro-m-cresol	14	2,4-Dinitrophenol	160
Aniline	14	Chloromethane/Methyl chloride	30	2,4-Dinitrotoluene	28
Anthracene	3.4	2-Chloronaphthalene	5.6	2,6-Dinitrotoluene	28
Alpha-BHC	0.066	2-Chlorophenol	5.7	Di-n-octyl phthalate	28
Beta-BHC	0.066	3-Chlorophenylene	30	Di-n-propylthiuronane	14
Delta-BHC	0.066	Chrysene	3.4	1,4-Dioxane	170
Garona-BHC (lindane)	0.066	o-Cresol	5.6	Diphenylamine	13
Barban	1.4	Cresol (m- and p- isomers)	5.6	Diphenylthiocarbamate	13
Bendiocarb	1.4	m-Cumenyl methylcarbamate	1.4	Disulfonol	6.2
Bendiocarb phenol	1.4	Cyrtlohexanone	0.75 mg/l TCIP	Dithiocarbamates (total)	28
Benzonil	1.4	o,p-DDD	087	Endosulfan I	0.066
Benzene	10	p,p-DDD	087	Endosulfan II	0.13
Bent (a) anthracene	3.4	o,p-DDE	087	Endosulfan sulfate	0.13
Benzal chloride	6.0	p,p-DDE	087	Endrin	0.13
Benzo (b) fluoranthene	6.8	o,p-DDT	087	Endrin aldehyde	0.13
Benzo (k) fluoranthene	6.8	p,p-DDT	087	EPTC	14
Benzo (k,j) perylene	6.8	Dibenz (a,h) anthracene	8.2	Ethyl Acetate	33
Benzo (a) pyrene	1.8	1,2-Dibromobenz-3-chloropropene	15	Ethyl benzene	10
Bromo-dichloromethane	15	1,2-Dibromobenz/Ethylene dibromide	15	Ethyl cyanide/isopropenitrile	360
Bromomethane / methyl bromide	0.11	Dibromomethane	15	Ethyl ether	160
4-Bromophenyl phenyl ether	15	m-Dichlorobenzene	6.0	Ethyl (2-Ethylhexyl)phthalate	28
n-Butyl alcohol	2.6	o-Dichlorobenzene	6.0	Ethyl methacrylate	160
Butylate	1.4	p-Dichlorobenzene	6.0	Famphur	15
Butyl benzyl phthalate	28	Dichlorodibromomethane	7.2	Fluorobenzene	3.4
2-sec-butyl-4,6-diaminophenol / diosorb	2.5	1,1-Dichloroethane	6.0	Fluorene	3.4
Carbaryl	0.14	1,2-Dichloroethane	6.0	Fluorene	3.4
Carbazosim	1.4	trans-1,2-Dichloroethylene	30	Formanate hydrochloride	1.4
Carbofuran	0.14	2,4-dichlorophenol	14	Formparanate	1.4
Carbofuran phenol	1.4	2,6-Dichlorophenol	14	Heptachlor	0.066
Carbon Disulfide	48mg/l TCIP	2,4-Dichlorophenoxyacetic acid/2,4,D	10	Heptachlor epoxide	0.066
Chlordane (alpha and gamma isomers)	0.26	1,2-Dichloropropane	18	Hexachlorobenzene	10
Carbon tetrachloride	6.0	cis-1,2-Dichloropropylene	18	Hexachlorobutadiene	5.6

[illegible]

LAB PACK FORMS

(Examples)

Crosby & Overton
Environmental Services
Lab Packs

LP 11663

I. GENERAL INFORMATION

Generator Name _____ Billing Name _____
Address _____ Address _____
City, State, Zip _____ City, State, Zip _____
Contact _____ Contact _____
Phone _____ Fax _____ Phone _____ Fax _____
EPA Number _____

Lab Pack Drum Numbers:

To insure expeditious approvals of lab pack inventories, please adhere to the following:

- ASSIGN each drum a unique ID number
- USE a C & O inventory sheet or one that contains the following information:
 - Generator name, address, and EPA ID number
 - Drum number, size, type, and weight
 - Proper and complete DOT shipping information
 - A numbered line entry for each item packed, including
 - material description
 - number of containers, size, and type (liquids in volume units, solids by weight)
 - Applicable waste codes (or "none", "N/R", etc.)
 - Page number (1 of 2, 2 of 2, etc.)
 - Crosby & Overton Waste Product Questionnaire number (upper right corner of this document)
 - Manifest document number
- Fax this questionnaire along with the lab pack inventories to (562)436-7540

II. GENERATOR CERTIFICATION STATEMENT

I hereby certify that, as an authorized representative of the generator named above, all information submitted in this and all the attached documents is true and accurate. Analysis of the waste was conducted in accordance with the approved test methods in 40 CFR 261 on a representative sample as defined in 40 CFR 261.20. To the best of my knowledge, all known (40 CFR 261) and suspected hazardous components have been included in this documentation. All material and packaging will comply with all current regulations.

Signature _____ Title _____ Date _____

1610 West 17th Street, Long Beach, California 90813
(562) 432-5445 (800) 8 CROSBY FAX (562) 436-7540

CONSOLOGATED WASTE INDUSTRIES, INC.
10980 BILCOON AVE., MONTCLAIR, CA 91764-4821 • (800) 825-6645 • (909) 758-2727 • FAX (909) 462-2275

CUSTOMER _____ **DRUM TYPE** _____ **SIZE** _____ **DATE** _____ **PAGE** 1 of 1

LOCATION _____ **PACKAGING MATERIAL** _____ **CHEMIST** _____ **MANIFEST #** _____

VERMICULITE _____

PROPER D.O.T. SHIPPING NAME, HAZARD CLASS, I.D. #

DRUM #	WASTE FLAMMABLE LIQUIDS, N.O.S., 3, UN1993	ERG #138 PG 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WASTE FLAMMABLE SOLID, INORGANIC, N.O.S., 4.1, UN1978	ERG #135 PG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WASTE FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, UN1928	ERG #135 PG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROBLEM	WASTE CORROSIVE LIQUIDS, N.O.S., 8, UN1780	ERG #134 PG 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WASTE CAUSTIC ALKALI LIQUIDS, N.O.S., 8, UN1718	ERG #134 PG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	CORROSIVE SOLIDS, N.O.S., 8, UN1750	ERG #134 PG 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TSDP	WASTE OXIDIZING SOLID, N.O.S., 5.1, UN1479	ERG #140 PG 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WASTE OXIDIZING LIQUID, N.O.S., 5.1, UN1133	ERG #140 PG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONTAINER	WASTE FLAMMABLE LIQUIDS, CORROSIVE, N.O.S., 3, UN2834	ERG #133 PG 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAZT	HAZARDOUS WASTE, LIQUID, N.O.S., 9, NA3882	ERG #171 PG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	HAZARDOUS WASTE, SOLID, N.O.S., 9, NA3077	ERG #171 PG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	NON HCL HAZARDOUS WASTE <input type="checkbox"/> LIQUID <input type="checkbox"/> SOLID		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WASTE HYDROGEN CHLORIDE, ANHYDROUS, 2.3, UN1080 (POISON INHALATION HAZARD) (ZONE C) #124		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER	OTHER DESCRIPTION _____		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ALL MATERIAL IS SPENT UNLESS THE NEW BOX IS MARKED

NO.	EX MATERIAL DESCRIPTION	PKTS. STATE	CONT. TYPE	QUANT.	PCRA WASTE #	SAFETY WASTE #
1		S L G	P M C			
2		S L G	P M C			
3		S L G	P M C			
4		S L G	P M C			
5		S L G	P M C			
6		S L G	P M C			
7		S L G	P M C			
8		S L G	P M C			
9		S L G	P M C			
10		S L G	P M C			
11		S L G	P M C			
12		S L G	P M C			
13		S L G	P M C			
14		S L G	P M C			
15		S L G	P M C			
16		S L G	P M C			
17		S L G	P M C			
18		S L G	P M C			
19		S L G	P M C			
20		S L G	P M C			
21		S L G	P M C			
22		S L G	P M C			

WHITE - MANIFEST YELLOW - CUSTOMER PINK - DRUM

SHIPPING PAPERS

Materials of Trade Exceptions

49CFR 173.6

MATERIALS OF TRADE

“No Shipping Papers required if:”

- Limited to classes 3, 8, 9, 4.1, 5.1, 5.2, 6.1, or ORM-D having a gross mass or capacity not over;
 - 0.5 kg (1 pound)
 - 30 kg (66 pounds)
 - 30 L. (8 gallons) (Packing group II or III)
 - 1500 L (400 gallons) for a diluted (2%) concentrate of Class 9 material

MATERIALS OF TRADE

“No Shipping Papers required if:”

- Limited to classes 2.1 or 2.2 in a cylinder with a gross weight not over;
 - 100 kg (220 pounds)
 - 70 gallon water capacity tank (Permanently mounted)
- Division 4.3
 - Not exceeding 30 ml (1 ounce)

MATERIALS OF TRADE

“No Shipping Papers required if:”

Packaging

- Leak-tight
- Secured against movement
- Protected from damage
- In manufacturers original or better containers

MATERIALS OF TRADE

“No Shipping Papers required if:”

Packaging

- Outer packaging not required for receptacles (cans and bottles) if they are secured from movement.
- Gasoline must be in metal or approved plastic containers.
- Cylinders or pressure vessel have valves tightly closed.

MATERIALS OF TRADE

“No Shipping Papers required if:”

Hazard Communications

- Non-bulk packaging must be marked with a common name or proper shipping name (including RQ if applicable)
- Bulk packaging must follow the appropriate marking requirements
- Driver must know the Hazmats are on the vehicle.

MATERIALS OF TRADE

“No Shipping Papers required if:”

Aggregate gross weight

- **May not exceed 200 kg (440 pounds)**
- **Materials of trade may be transported on a motor vehicle under the provisions of this section with other Hazmat without effecting it's eligibility for the exceptions in this section.**

PLACARDING

49 CFR Section 172.500

Placarding requirements

Prohibited

- No person may affix or display on... any placard described in this subpart unless:
 - Material is hazardous
 - Placard represents a hazard of the material being offered or transported
 - Placard conforms to the requirements of this subpart
- No sign or other device that could be confused with a placard

Placarding requirements

Permissive

Placards may be displayed for an HM, even when not required

- If otherwise conforming to this section



Placarding requirements

GENERAL

...Vehicle...containing any quantity of a hazardous material must be placarded on

- each side and
- each end
- with the type of placards specified
- in Tables 1 and 2 of this section and in accordance with other placarding requirements of this subpart...



49 CFR 172.504



Placarding requirements

Table 1 & 2

TABLE 1

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (\$)
1.1	EXPLOSIVES 1.1	172.522
1.2	EXPLOSIVES 1.2	172.522
1.3	EXPLOSIVES 1.3	172.522
2.3	POISON GAS	172.540
4.3	DANGEROUS WHEN WET	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (inhalation hazard, Zone A or B)	POISON INHALATION HAZARD	172.555
7 (Radioactive Yellow III label only)	RADIOACTIVE ¹	172.556

¹ RADIOACTIVE placard also required for exclusive use shipments of low specific activity material in accordance with § 173.425 (b) or (c) of this subchapter.

TABLE 2

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (\$)
1.4	EXPLOSIVES 1.4	172.523
1.5	EXPLOSIVES 1.5	172.524
1.6	EXPLOSIVES 1.6	172.525
2.1	FLAMMABLE GAS	172.532
2.2	NON-FLAMMABLE GAS	172.528
3	FLAMMABLE	172.542
Combustible liquid	COMBUSTIBLE	172.544
4.1	FLAMMABLE SOLID	172.546
4.2	SPONTANEOUSLY COMBUSTIBLE	172.547
5.1	OXIDIZER	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (PG I or II, other than PG I inhalation hazard)	POISON	172.554
6.1 (PG I or II, other than Zone A or B inhalation hazard).	POISON	172.554
6.1 (PG III)	KEEP AWAY FROM FOOD	172.553
6.2	(None) .....	.....
8	CORROSIVE	172.558
9	CLASS 9	172.560

Placarding requirements

DANGEROUS

...Contains non-bulk packaging with two (2) or more categories of HM that require different placards specified in Table 2 may be placarded with DANGEROUS placards instead of separate placarding

However when 1000 kg (2205 pounds) or more of one category of material is loaded, the placard specified in Table 2 must be applied.

49 CFR 172.504



Placarding requirements

Weight rules

- 454 Kilogram (1001 pound)
 - **Must placard the vehicle**
- 1000 Kilogram (2205 pound)
 - **Must placard the specific hazard class exceeded**
- 4000 Kilogram (8820 pound)
 - **Large quantities of Non-Bulk packages**
 - **All the HM loaded have the same proper shipping name and ID number**
 - **ID number must be marked on Placards displayed** (49CFR 172.301(a)(3))

Placarding requirements

Exceptions

- **FLAMMABLE Placard may be used in place of COMBUSTIBLE Placard**
- **NON-FLAMMABLE GAS Placard not required if FLAMMABLE GAS or OXYGEN Placard is required**
- **OXIDIZER & EXPLOSIVES placards not both required.**
- **Except for a material classed as a combustible liquid that also meets the definition of a Class 9 material, a COMBUSTIBLE placard is not required ... when transported in a non-bulk packaging. (172.504(f)(8))**

Placarding requirements

New Changes

- **October 1, 2001**
 - **POISON GAS and TOXIC GAS placards cannot be used in the U.S. INHALATION HAZARD placard must be used**
- **October 1, 2003**
 - **HARMFUL STOWAWAY FROM FOODSTUFFS placard cannot be used in the U.S. Instead a POISON, TOXIC, or PG III placard must be used**

Placarding requirements

Subsidiary hazards

- **HM that pose secondary hazards may exhibit subsidiary placards that correspond to the placards described in this part, even when not required by this part. 172.505 (d)**
- **If an HM demonstrates the subsidiary hazard of dangerous when wet and any other hazard class, then the DANGEROUS WHEN WET placard must ALSO be displayed on 4 sides of the transport vehicle.**

Placarding requirements

Affixing Placards

- Each person offering a motor carrier a HM for transportation by highway shall provide to the motor carrier the required placards.
(unless they are already on the truck)
- No motor carrier may transport a hazardous material in a motor vehicle, unless the placards required for the HM are affixed thereto as required by this part. 172.506(1) and 172.500(a)
 - Placarding is no longer just the responsibility of the person offering the load for hire, but the drivers problem also.

§172.505 PLACARDING FOR SUBSIDIARY HAZARDS



(a) Each transport vehicle, freight container, portable tank, unit load device, or rail car that contains a poisonous material subject to the "Poison-Inhalation Hazard" shipping description of §172.203(m)(3) must be placarded with a POISON INHALATION HAZARD or POISON GAS placard, as appropriate, on each side and each end, in addition to any other placard required for that material in §172.504. Duplication of the POISON INHALATION HAZARD or POISON GAS placard is not required.



(b) In addition to the RADIOACTIVE placard which may be required by §172.504(e) of this subpart, each transport vehicle, portable tank or freight container that contains 454 kg (1001 pounds) or more gross weight of fissile or low specific activity uranium hexafluoride shall be placarded with a CORROSIVE placard on each side and each end.



(c) Each transport vehicle, portable tank, freight container or unit load device that contains a material which has a subsidiary hazard of being dangerous when wet, as defined in §173.124 of this subchapter, shall be placarded with DANGEROUS WHEN WET placards, on each side and each end, in addition to the placards required by §172.504.

(d) Hazardous materials that possess secondary hazards may exhibit subsidiary placards that correspond to the placards described in this part, even when not required by this part (see also §172.519(b)(4) of this subpart).

Placarding requirements

Affixing Placards - Rail

- Each person offering a HM for transportation by rail shall provide to the carrier the required placards. (unless they are already on the train or vehicle being interlined on a flatbed car)
- Residue placards are no longer legal.
- Fumigated cars must display a FUMIGATION placard

Placarding requirements

Visibility and display

- Each placard must be readily visible from the direction it faces
 - Front of vehicle or visible on cargo body
 - Securely attached / affixed
 - Unobscured by appurtenances
 - Away from other markings
 - On contrasting background
- Capable of surviving 30 day exposure to open weather conditions

LOADING / STORAGE

49 CFR Part 177

HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART

CLASS		PLACARD	CLASS OF DANGER	PLACARD POSITION	NOTES	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.3	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	7	8	
CLASS	EXPLOSIVES "Add division number and compatibility group"		1.1 1.2	ANY QUANTITY	A	*	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
1	EXPLOSIVES "Add division number and compatibility group"		1.3	ANY QUANTITY		*	*	*	*	*	*	X		X	X	X			X	X	X	X			X	
	EXPLOSIVES "Add compatibility group"		1.4	1001 Lbs.		*	*	*	*	*	*	0		0	0	0			0				0		0	
	VERY INSENSITIVE EXPLOSIVES		1.5	1001 Lbs.	A	*	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	EXTREMELY INSENSITIVE EXPLOSIVES		1.6	1001 Lbs.		*	*	*	*	*	*															
2	FLAMMABLE GASES		2.1	1001 Lbs.		X	X	0	X					X	0								0	0		
	NON-TOXIC NON-FLAMMABLE GASES		2.2	1001 Lbs.	B	X				X																
	POISONOUS GAS ZONE A		2.3	ANY QUANTITY	G	X	X	0	X			X					X	X	X	X	X	X			X	
	POISONOUS GAS ZONE B		2.3	ANY QUANTITY	G	X	X	0	X			0					0	0	0	0	0	0			0	
3	FLAMMABLE LIQUIDS		3	1001 Lbs.		X	X	0	X					X	0						0		X			
4	FLAMMABLE SOLIDS		4.1	1001 Lbs.		X				X				X	0								X		0	
	SPONTANEOUSLY COMBUSTIBLE		4.2	1001 Lbs.		X	X	0	X					X	0								X		X	
	DANGEROUS WHEN WET MATERIALS		4.3	ANY QUANTITY		X	X			X				X	0								X		0	
5	OXIDIZERS		5.1	1001 Lbs.	A	X	X			X				X	0	0							X		0	
	ORGANIC PEROXIDES		5.2	1001 Lbs.	F	X	X			X				X	0								X		0	
6	POISONOUS LIQUIDS PG I ZONE A		6.1	ANY QUANTITY	E H	X	X	0	X			0					X	X	X	X	X	X			X	
7	RADIOACTIVE MATERIALS		7	ANY QUANTITY (yellow II label)		X				X		0														
8	CORROSIVE LIQUIDS		8	1001 Lbs.		X	X	0	X					X	0			0	X	0	0	0	X			
SECTION (vi) INSTRUCTIONS FOR USING THE SEGREGATION TABLE FOR HAZARDOUS MATERIALS ARE AS FOLLOWS:																										
3	COMBUSTIBLE LIQUIDS		IN BULK		C J	(1) The absence of any hazard label or device in a fourth column in this Table indicates that the hazardous material is not listed in the Table. (2) The letter "X" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation. (3) The letter "0" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation, unless separated by a barrier that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. (4) The letter "F" in the Table indicates that segregation among different Class 5 (oxidizers) materials is governed by the compatibility table in paragraph (b) of this section. (5) The letter "E" in the Table indicates that segregation among different Class 6 (poisonous) materials is governed by the compatibility table in paragraph (b) of this section. (6) The letter "H" in the Table indicates that segregation among different Class 6 (poisonous) materials is governed by the compatibility table in paragraph (b) of this section. (7) The letter "A" in the Table indicates that segregation among different Class 1 (explosives) materials is governed by the compatibility table in paragraph (b) of this section. (8) The letter "B" in the Table indicates that segregation among different Class 2 (gases) materials is governed by the compatibility table in paragraph (b) of this section. (9) The letter "G" in the Table indicates that segregation among different Class 2.3 (poisonous gases) materials is governed by the compatibility table in paragraph (b) of this section. (10) The letter "I" in the Table indicates that segregation among different Class 6.1 (poisonous liquids) materials is governed by the compatibility table in paragraph (b) of this section. (11) The letter "J" in the Table indicates that segregation among different Class 8 (corrosive liquids) materials is governed by the compatibility table in paragraph (b) of this section. (12) The letter "K" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (13) The letter "L" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (14) The letter "M" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (15) The letter "N" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (16) The letter "O" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (17) The letter "P" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (18) The letter "Q" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (19) The letter "R" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (20) The letter "S" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (21) The letter "T" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (22) The letter "U" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (23) The letter "V" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (24) The letter "W" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (25) The letter "X" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (26) The letter "Y" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (27) The letter "Z" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section.																				
6.1	OTHER THAN BULK HAZARDOUS MATERIALS PG I ZONE A		1001 Lbs.		C E	(1) The absence of any hazard label or device in a fourth column in this Table indicates that the hazardous material is not listed in the Table. (2) The letter "X" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation. (3) The letter "0" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation, unless separated by a barrier that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. (4) The letter "F" in the Table indicates that segregation among different Class 5 (oxidizers) materials is governed by the compatibility table in paragraph (b) of this section. (5) The letter "E" in the Table indicates that segregation among different Class 6 (poisonous) materials is governed by the compatibility table in paragraph (b) of this section. (6) The letter "H" in the Table indicates that segregation among different Class 6 (poisonous) materials is governed by the compatibility table in paragraph (b) of this section. (7) The letter "A" in the Table indicates that segregation among different Class 1 (explosives) materials is governed by the compatibility table in paragraph (b) of this section. (8) The letter "B" in the Table indicates that segregation among different Class 2 (gases) materials is governed by the compatibility table in paragraph (b) of this section. (9) The letter "G" in the Table indicates that segregation among different Class 2.3 (poisonous gases) materials is governed by the compatibility table in paragraph (b) of this section. (10) The letter "I" in the Table indicates that segregation among different Class 6.1 (poisonous liquids) materials is governed by the compatibility table in paragraph (b) of this section. (11) The letter "J" in the Table indicates that segregation among different Class 8 (corrosive liquids) materials is governed by the compatibility table in paragraph (b) of this section. (12) The letter "K" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (13) The letter "L" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (14) The letter "M" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (15) The letter "N" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (16) The letter "O" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (17) The letter "P" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (18) The letter "Q" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (19) The letter "R" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (20) The letter "S" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (21) The letter "T" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (22) The letter "U" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (23) The letter "V" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (24) The letter "W" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (25) The letter "X" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (26) The letter "Y" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (27) The letter "Z" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section.																				
9	MISCELLANEOUS		1001 Lbs.		C D	(1) The absence of any hazard label or device in a fourth column in this Table indicates that the hazardous material is not listed in the Table. (2) The letter "X" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation. (3) The letter "0" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation, unless separated by a barrier that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. (4) The letter "F" in the Table indicates that segregation among different Class 5 (oxidizers) materials is governed by the compatibility table in paragraph (b) of this section. (5) The letter "E" in the Table indicates that segregation among different Class 6 (poisonous) materials is governed by the compatibility table in paragraph (b) of this section. (6) The letter "H" in the Table indicates that segregation among different Class 6 (poisonous) materials is governed by the compatibility table in paragraph (b) of this section. (7) The letter "A" in the Table indicates that segregation among different Class 1 (explosives) materials is governed by the compatibility table in paragraph (b) of this section. (8) The letter "B" in the Table indicates that segregation among different Class 2 (gases) materials is governed by the compatibility table in paragraph (b) of this section. (9) The letter "G" in the Table indicates that segregation among different Class 2.3 (poisonous gases) materials is governed by the compatibility table in paragraph (b) of this section. (10) The letter "I" in the Table indicates that segregation among different Class 6.1 (poisonous liquids) materials is governed by the compatibility table in paragraph (b) of this section. (11) The letter "J" in the Table indicates that segregation among different Class 8 (corrosive liquids) materials is governed by the compatibility table in paragraph (b) of this section. (12) The letter "K" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (13) The letter "L" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (14) The letter "M" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (15) The letter "N" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (16) The letter "O" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (17) The letter "P" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (18) The letter "Q" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (19) The letter "R" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (20) The letter "S" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (21) The letter "T" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (22) The letter "U" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (23) The letter "V" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (24) The letter "W" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (25) The letter "X" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (26) The letter "Y" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section. (27) The letter "Z" in the Table indicates that segregation among different Class 9 (miscellaneous) materials is governed by the compatibility table in paragraph (b) of this section.																				
NOTES																										
PLACARDS NOT REQUIRED FOR:																										
DANGEROUS PLACARDS FOR MIXED LOADS																										

Segregation of Hazardous Materials

X = Material may **not** be loaded, transported or stored together

O = ... may be loaded together but must be separated in a manner that will prevent commingling of hazmats if they leak.

***** = Segregation of Class 1 materials

A = Ammonium Nitrate special considerations

LOADING / STORAGE

- Class 7 (Radioactive) Materials
 - Radioactive II or III
 - No closer than 3 feet from people
 - No closer than 15 feet from undeveloped film
- Transport Index
 - Separate from Film
 - People



LOADING / STORAGE

- Aircraft
 - See 172.101 table Column 9
- Vessels
 - See 172.101 table Column 10

This is a different classroom session

LOADING / STORAGE

Detailed Requirements

1) Explosive	Sec. 177.135
2) Gases	Sec. 177.840
3) Flammable Liquid	Sec. 177.837
4) Flammable Solid	Sec. 177.838
5) Oxidizer	Sec. 177.838
6) Poisons & Poison Gas	Sec. 177.841
7) Radioactive	Sec. 177.842
8) Corrosive	Sec. 177.839
9) Miscellaneous	Sec. 177.844

LOADING / STORAGE

General Requirements

- Packages must be secured against movement within the vehicle, and valves / fitting protected from damage
- No Smoking on or near a vehicle during loading or unloading of 1,3,4,5,& 2.1
- Hand brake must be set and all reasonable precautions to prevent vehicle movement during load/unload



LOADING / STORAGE

General Requirements

- Protect containers sensitive to temperature from undue rise or fall during transit from origin to destination
- Attendance, at all times, by a qualified person during loading / unloading of cargo tanks
- NO tools to be used that are likely to damage any package or container, etc.

Ca. Com.Drivers Handbook

Basic Driver requirements

- Make sure shipper identified, marked, and labeled the product correctly
- Refuses leaking packages
- Refuses shipments not properly prepared
- Attaches placards when loading, if needed
- Safely transports the shipment
- Follows special rules of HM shipments
- Keeps shipping papers, and ER info. in order and in the proper place

Ca. Com.Drivers Handbook

Drivers requirements

- Stop before crossing a railroad track if your vehicle:
 - Is marked or placarded
 - Carries any amount of chlorine
 - Has cargo tanks, empty or full, used for hazardous materials or wastes



EMERGENCIES

How to deal with them

Work Authorization Bids (Shop Around!!!)

CONSOLIDATED WASTE INDUSTRIES, INC.

10400 Silicon Ave., Menlo Park, California 94025

(950) 422-8842 Fax (950) 482-2271

E-Mail address: con@cwilnet.com

DTSC WORK AUTHORIZATION

Customer #00-0361122

JOB# _____

CLIENT # _____

Billing Address:

Chief, Contracts and Office Services
Department of Toxic Substances Control
Post Office Box 806
Sacramento, Ca 95812-0806

DATE _____ INITIAL CALL _____ ESTIMATE _____

DTSC DUTY OFFICER _____ PHONE _____

SITE ADDRESS _____ SITE EPA # _____

_____ GENERATOR _____

JOB DESCRIPTION: _____

LAW ENFORCEMENT AGENCY: _____

CONTACT _____ PHONE _____

ADDRESS _____ CASE # _____

MANIFEST NUMBER _____ TSD# _____ ADDITIONAL INFORMATION: _____

CUSTOMER SIGNATURE _____ DATE _____

[illegible]





Dealing with Emergencies

- In the event of a crash:
 - Check to see your partner is OK
 - Keep shipping papers with you
 - Keep people far away and upwind
 - Warn others of the dangers
 - Send for help
 - Follow your employer's instructions

Dealing with Emergencies

- In the event of a Fire:
 - Send someone for help
 - Control minor fires “IF YOU CAN”
 - Don’t open cargo doors if they feel hot
 - Keep shipping papers with you to give to emergency personnel
 - Warn other people of danger and keep them away



Dealing with Emergencies

- In the event of a Leak:
 - Do not touch any leaking material.
 - If no material is leaking from your vehicle, drive to area where you can get help
 - Never move vehicle if that will spread the contamination.
 - You may move vehicle off the road if it is safe for you to do so
 - Carrier pays for the cleanup

Dealing with Emergencies

In the event of a Leak:

- Never repack the load or repair a leak unless you have special training to do so safely.
- Send someone for help
- Stay at scene
- Keep shipping papers with you to give to emergency personnel
- Warn other people of danger and keep them away

Ready for a review??

Or just want to take the exam?